

I claim:

1 1. A method for reducing run out of an FDB motor during  
2 servo write, comprising the steps of:

3 increasing the stiffness of the FDB motor's bearings  
4 during servo write; and

5 decreasing the stiffness of the bearing after servo  
6 write.

1 2. The method of claim 1 wherein said increasing step  
2 comprises compressing the FDB motor's shaft.

1 3. The method of claim 2 wherein said compressing step  
2 comprises applying a compressive load to said shaft.

1 4. The method of claim 1 wherein said increasing step  
2 comprises increasing the rotational velocity of the  
3 FDB motor.

1 5. The method of claim 1 wherein said increasing step  
2 comprises significantly reducing the temperature of  
3 the FDB motor during servo write so as to increase the  
4 viscosity of the fluid of the FDB's motors bearings.

1 6. The method of claim 2 wherein said compressing step  
2 comprises applying a compressive load to the shaft by  
3 a means of a clamping tool abutting each end of the  
4 shaft.

1 7. The method of claim 2 wherein said compressing step  
2 comprises an electromagnet mounted at one end of the

3           rotating elements of the FDB motor that operates when  
4           actuated to reduce the gap of at least one of the FDB  
5           motor bearings.

1   8.   Apparatus for increasing the stiffness of an FDB motor  
2           during servo write, comprising:

3           an FDB motor bearing having a stiffness; and  
4           means for selectively increasing the stiffness of said  
5           bearing.

1   9.   Apparatus according to claim 8, wherein said means for  
2           selectively increasing the stiffness of said bearing  
3           comprises:

4           means for selectively providing a compressive load on  
5           the shaft of said FDB motor.

1   10.   Apparatus according to claim 9, wherein said means for  
2           providing a compressive load on said shaft comprises:

3           means for selectively clamping each end of said shaft.

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1   11.   Apparatus according to claim 8, wherein said means for  
2           selectively increasing the stiffness of said bearing  
3           comprises:

4           electromagnetic means mounted on the rotating elements  
5           of the FDB motor for attracting said rotating

6           elements in an axial direction vis-à-vis the  
7           shaft of FDB motor.

1   12. Apparatus according to claim 8, wherein said means for  
2       selectively increasing the stiffness of said bearing  
3       comprises:

4           electromagnetic means mounted on the rotating elements  
5           of the FDB motor for attracting said rotating  
6           elements in a direction that reduces the gap of  
7           at least one of the FDB motor's bearings.

1   13. Apparatus according to claim 8, wherein said means for  
2       selectively increasing the stiffness of said bearing  
3       comprises:

4           means for selectively reducing the temperature of said  
5           FDB motor to increase the viscosity of the FDB  
6           motor's bearing fluid.

1   14. Apparatus for increasing the bearing stiffness of the  
2       FDB motor during servo write, comprising:

3           a shaft having two ends; and

4           a releasable clamp abutting said two ends.

1   15. Apparatus according to claim 14, further including:

2           a disk drive casing;

3           at least one end of said shaft being mounted on said  
4           casing; and

5           said clamp abuts said casing.

1   16. Apparatus according to claim 12, wherein said  
2       electromagnetic means comprises:

3       an annular steel ring mounted on one axial end of the  
4       rotating elements of said FDB motor;

5       an annular U-shaped ring mounted in a fixed  
6       relationship to said rotating elements and facing  
7       said annular steel ring; and

8       a current bearing coil mounted in said U-shaped ring.

1   17. Apparatus according to claim 16, wherein said U-shaped  
2       ring it is mounted on the casing of a disk drive in  
3       which said FDB motor is mounted.

1   18. The method according to claim 1 wherein said FDB motor  
2       has at least one conical bearing and said method of  
3       increasing the stiffness of said FDB motor bearings  
4       includes selectively reducing the gap of said conical  
5       bearing.

1   19. The apparatus according to claim 8, wherein said means  
2       for selectively increasing the stiffness of said  
3       bearing comprises:

4       at least one conical bearing; and

5       means for selectively reducing the gap of said conical  
6       bearing.

1    20. Apparatus according to claim 14, further comprising:  
2                a rotating element; and  
3                a conical bearing mounted between said shaft and said  
4                rotating element;  
5                wherein said clamp compresses said shaft to reduce the  
6                gap of said conical bearing to thereby increase  
7                the stiffness of said conical bearing.